



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,458	10/27/2003	Brian E. Joseph	07620001C1	2930
48642	7590	06/15/2007	EXAMINER	
PHILIP D. LANE			MILLER, DANIEL H	
P.O. BOX 79318			ART UNIT	
CHARLOTTE, NC 28271-7063			PAPER NUMBER	
			1775	
			MAIL DATE	
			DELIVERY MODE	
			06/15/2007	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/693,458	Applicant(s) JOSEPH, BRIAN E.	
	Examiner Daniel Miller	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/3/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/3/2007 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 21-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claim 21, what is a "structural portion"? This term is not clearly defined. For purposes of examination any structure or surface is considered a "structural portion".

Claim Rejections - 35 USC § 102

Art Unit: 1775

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 21-28, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Rogers et al (US 6,656,238).

3. Rogers teaches a coal-based carbon foam (abstract) having a thermal conductivity below 1 W/m/K (ref. Claim 1). The foam can be laminated with aluminum (a structural portion on a surface) or other protective layers and used as a thermal protective system (column 6 line 10-41). The carbon foam has a density of between about 0.05 and about 0.1 g/cc (ref. Claim 1), which is an overlapping range. The compressive stress is below about 6000psi (ref. claim 3). Regarding claim 25, the foam can be carbonized (column 5 line 52-63). Regarding claim 26, the foam can comprise petroleum pitch, epoxy, or polymer additives (column 6 line 33-40). Regarding claims 27-28, inert solid material such as ceramic particles, or coke particles can be added to further minimize expansion of the foam (column 5 line 45-51). The coke or ceramic additives can be considered oxygen inhibitors as claimed, in as much as applicant has defined said term. Regarding claim 34, the carbon foam can be used as a bulkhead or for sound dampening, therefore would inherently be positioned over a structure.

Art Unit: 1775

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 21 and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Mayer (US 5,626,977).

5. Mayer teaches a composite carbon foam electrode with solid particles being added, including aluminum fibers (see abstract and column 3 line 54-59)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Johnson (US 4,221,092) further in view of Kourtides (US 4,598,007).

8. Rogers, discussed above, teaches all the elements of claims 31-33, but is silent as to the antioxidant protective layer being a glass-forming compound consisting of a metal halide nitride or carbide, or the antioxidant protective layer being a metal or aluminum.

9. Johnson teaches it is known in the art of fire barriers (thermal protection material) comprising carbon foam to incorporate glasses used as fire retardant chemicals

Art Unit: 1775

(column 3 line 5-11). However the reference is silent as to the origin of the glass material.

10. Kourtides teaches a fire resistant graphite (carbon) composite, with a porous honeycombed center and facesheet protective layers (see abstract and figure 1). The facesheet can be made from a resin, glass fibers, and boron nitride additives (which will inherently form glass like coatings). The glass facesheet gives a more fire resistant properties.

11. Therefore since both Rogers and Kourtides teach the advantage of fire resistance, it would have been obvious to one of ordinary skill in the art to employ the facesheet (protective layer) of Kourtides as a protective layer on the carbon foam of Rogers in order to improve fire resistance of Rogers in fire retardant applications or to incorporate the glass of Johnson in order to add fire retardant chemicals. It would further be obvious for the glass additives of Johnson to comprise similar material to that of Kourtides glass facesheet since the glass fibers and boron nitride glass forming material is known in the art to possess fire resistant properties.

Response to Arguments

12. Applicant's arguments filed 6/3/2007 have been fully considered but they are not persuasive. Regarding the 102 rejection over Rogers, the foam of Rogers can comprise petroleum pitch, epoxy, or polymer additives (column 6 line 33-40) or inert solid material such as ceramic particles can be added to further minimize expansion of the foam

(column 5 line 45-51). Any of the additives can be considered oxygen inhibitors as claimed, in as much as applicant has defined said term.

13. Regarding the 103 rejection a new rejection has been written adding the Johnson reference (see above).

14. Regarding applicant's argument that the combination of Rogers and Kourtides do not combine to get the invention of applicant's claim 21.

15. Since both Rogers and Kourtides teach the advantage of fire resistance, it would have been obvious to one of ordinary skill in the art to employ the facesheet (protective layer) of Kourtides as a protective layer on the carbon foam of Rogers in order to improve fire resistance of Rogers in fire retardant applications. Further, it would have been obvious to incorporate the glass of Johnson in order to add fire retardant chemicals. It would further be obvious for the glass additives of Johnson to comprise similar material to that of Kourtides glass facesheet since the glass fibers and boron nitride glass forming material is known in the art to possess fire resistant properties desired by Johnson and ultimately Rogers.

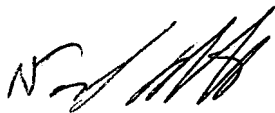
Conclusion

Art Unit: 1775

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571) 272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel Miller



JENNIFER C. MCNEIL
SUPERVISORY PATENT EXAMINER

6/11/14